

Chapter 1: Introduction and Overview

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This report provides reference information about the design and operation of two nationwide surveys conducted by the Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA) from 1994 through 1996: the Continuing Survey of Food Intakes by Individuals (CSFII) and the Diet and Health Knowledge Survey (DHKS).¹ The CSFII and DHKS 1994–96 are the most recent in a series of USDA surveys designed to measure the kinds and amounts of foods eaten by Americans and their attitudes and knowledge about diet and health. The CSFII and DHKS were planned so that information collected on dietary attitudes and knowledge (DHKS) could be linked with information collected on food choices and nutrient intakes (CSFII). The surveys are popularly known as the “What We Eat in America Survey,” but will be referred to in this report as the CSFII/DHKS 1994–96.

One mission of USDA is to encourage the production and availability of a sufficient, safe, and nutritionally adequate supply of food for Americans. In support of this mission, USDA conducts surveys to monitor food use and food consumption patterns in the U.S. population. The CSFII provides detailed data that serve as benchmarks of the food and nutrient intakes of the general and low-income populations. Users of the survey data include Federal Government agencies, such as the Environmental Protection Agency, Food and Drug Administration, and Federal Trade Commission; state agencies and larger county health departments; food and agricultural industries; and university researchers. The data are used to determine the food choices Americans make and to evaluate the content and adequacy of their diets in relationship to the *Dietary Guidelines for Americans* (USDA and U.S. Department of Health and Human Services 1995) and other Federal Government statements of dietary policy, such as the year 2000 nutrition objectives (U.S. Department of Health and Human Services 1991). Health interventions, such as the National Cancer Institute’s “5 a day program” (Subar 1992) and nutrition education materials, such as the *Food Guide Pyramid* (USDA 1992) are developed and targeted based on survey results. In other food- and nutrition-related program and public policy applications, the data are used to

1. The CSFII and DHKS 1994–96 were planned by the Human Nutrition Information Service (HNIS), USDA. On February 20, 1994, legislation passed by Congress moved the functions of HNIS to the Agricultural Research Service, USDA.

assess the nutritional impact of USDA's food assistance programs; to estimate exposure to pesticide residues, food additives, and contaminants; and to develop food fortification, enrichment, and food labeling policies. Other uses include assessment of the demand for agricultural products and marketing facilities and food- and nutrition-related research.

The DHKS was the first national survey of dietary attitudes and knowledge in which the results could be linked to food and nutrient intakes gathered from the same individuals in the CSFII. The DHKS provides information on people's attitudes and knowledge about the *Dietary Guidelines for Americans* and the ability to put them into practice (USDA and U.S. Department of Health and Human Services 1995). It provides information on people's perceived adequacy of their own food and nutrient intakes, their knowledge about the recommendations in the *Food Guide Pyramid* (USDA 1992), the personal importance they place on dietary guidance messages, their awareness of relationships between diet and health, and their use and understanding of food labels. This type of information is used to improve understanding of factors that affect food intake. In particular, it is used by nutrition educators in academia and the Federal Government to identify ways to implement dietary guidance effectively. Federal Government agencies that use the data include USDA's Center for Nutrition Policy and Promotion and Economic Research Service, and U.S. Department of Health and Human Services' Food and Drug Administration.

The CSFII and DHKS are major components of the National Nutrition Monitoring and Related Research Program, which consists of a set of related Federal activities intended to provide information on the dietary and nutritional status of the U.S. population (U.S. Department of Health and Human Services and USDA 1993). The CSFII addresses the requirements of the National Nutrition Monitoring and Related Research Act of 1990 (Public Law 101-445) for continuous monitoring of the dietary and nutritional status of the U.S. population. CSFII data have been an integral part of the reports to Congress on nutrition monitoring in the United States (U.S. Department of Health and Human Services and USDA 1986, 1989 and Federation of American Societies for Experimental Biology 1995).

USDA has collected national information on food intakes by individuals since 1965 when a supplement to the 1965-66 Household Food Consumption Survey was added (USDA-ARS 1972). In that survey, food intake information was collected from selected household members using a 24-hour dietary recall. Individual intake data were also collected in the Nationwide Food Consumption Surveys in 1977-78 (USDA-HNIS 1983, 1984) and in 1987-88 (USDA-HNIS 1993); information on individual intakes was collected over 3 consecutive days with a 24-hour dietary

recall and a 2-day diet record. The 1965–66 Household Food Consumption Survey and the 1977–78 and 1987–88 Nationwide Food Consumption Surveys included a household food use component also.

The Continuing Survey of Food Intakes by Individuals, initiated in 1985, was the first national USDA survey of dietary intake by individuals that was independent of a household food use component (USDA–HNIS 1985). The CSFII is intended to provide frequent information on the dietary status of individuals in the U.S. population. In 1985 and 1986, the CSFII included women 19 through 50 years of age and their children 1 through 5 years (USDA–HNIS 1985, 1987, 1988). In both years, data were obtained through 6 nonconsecutive 24-hour dietary recalls that were administered every 2 months throughout the year. The first recall was administered through an in-person interview, and the remaining recalls were conducted through a telephone interview. Data were collected for the total and low-income populations in both survey years. The CSFII 1985 also included the collection of 1 day of dietary data from men 19–50 years (USDA–HNIS 1986).

The CSFII was conducted again in 1989–91 (Tippett et al. 1995). Dietary information was collected from all members of sample households for 3 consecutive days. In 1989–91, the DHKS was conducted as a telephone followup to the CSFII. Individuals identified as main meal planners/preparers were contacted about 6 weeks after completing the CSFII to answer a series of questions about knowledge and attitudes toward diet, health, and food safety (Cypel et al. 1996).

The CSFII/DHKS 1994–96 is USDA's 10th nationwide survey, the sixth to include the collection of individual intake data (table 1). The development of the CSFII/DHKS 1994–96 included substantial research and planning, as well as extensive collaboration with other organizations within and outside the Federal sector (see chapter 2). These collaborations included interagency agreements with the U.S. Bureau of the Census and USDA's National Agricultural Statistics Service; the establishment of a Continuing Survey Users' Group; and a cooperative agreement with the University of Texas–Houston School of Public Health. These research and planning activities provided the base for the survey procedures and materials utilized in the 1994–96 CSFII/DHKS.

The CSFII/DHKS 1994–96 included a target population of noninstitutionalized individuals in all 50 states and Washington, DC, and subsampling within households. In comparison with earlier surveys, the CSFII/DHKS 1994–96 included an oversampling of the low-income population, rather than separate low-income samples; a larger sample in selected sex-age categories, specifically young

children and the elderly; and the collection of knowledge, behavior, and attitude data from one adult in the household, rather than targeting the main meal planner/preparer.

In 1992, Westat, Incorporated, a private research firm in Rockville, Maryland, was awarded the contract for the CSFII 1994–96 after competitive bidding. Westat designed the sample to meet the precision and sample yield requirements specified by USDA; designed and formatted the questionnaires; worked collaboratively with USDA to further develop the survey methods and procedures; developed the promotional materials, and, as specified by the contract, conducted a pilot study of all survey procedures, operations, and materials. USDA defined the information to be collected; monitored the contract; provided technical information, such as food codes and gram weights of standard measures of food for use in coding; and provided Survey Net, a computer-assisted system for the coding of reported food intakes. Westat collected the information; edited, coded, and keyed the data; and created the sample weights. USDA did additional editing and coding; maintained the nutrient database and applied nutrient values to the food intake data; and prepared the data for public release.

Three years of continuous data collection began in 1994. In each survey year, a nationally representative sample of individuals of all ages was asked to provide food intakes for 2 nonconsecutive days (day 1 and day 2) through the administration of in-person, 24-hour dietary recalls spaced 3–10 days apart. In each CSFII household, the DHKS was administered to one adult 20 years of age or over who had provided at least 1 day of intake data. The DHKS was administered by telephone about 2 to 3 weeks after the CSFII intake data were collected.

This report contains information on all phases of the CSFII/DHKS 1994–96 design and operation. Chapter 2 provides information on the planning and development of the surveys. Chapters 3 through 8 present detailed descriptions of the sample design, data collection procedures, response results, management and quality control procedures, data-processing procedures, and calculation of sample weights. Copies of publicity materials, food measurement guides, and the 1996 survey instruments are included in the appendices.

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Table 1. Overview of USDA dietary intake surveys, 1965–1996

Survey	Population	Sample	Type of data collected	Dietary method
1965–66 Household Food Consumption Survey	48 states	Two separate samples (basic and low income); selected household members were asked to provide intake information	Household food use; individual intake	7 consecutive days, food list-recall; 24-hr. dietary recall
1977–78 Nationwide Food Consumption Survey (NFCS)	48 states	Two separate samples (basic and low income); all household members were asked to provide intake information	Household food use; individual intake	7 consecutive days, food list-recall; 3 consecutive days: 24-hr. dietary recall and 2-day diet record
1985–86 Continuing Survey of Food Intakes by Individuals (CSFII)	48 states	Two separate samples (basic and low income); women 19–50 yr. and their children 1–5 yr. in both years and men 19–50 yr. in 1985 only	Individual intake	Women and children: 6 nonconsecutive 24-hr. dietary recalls; day 1 in person and remaining days by telephone. Men: day 1 only
1987–88 NFCS	48 states	Two separate samples (basic and low income); all household members were asked to provide intake information	Household food use; individual intake	7 consecutive days, food list-recall; 3 consecutive days: 24-hr. dietary recall and 2-day diet record
1989–91 CSFII	48 states	Two separate samples (basic and low income); all household members were asked to provide intake information	Individual intake	3 consecutive days: 24-hr. dietary recall and 2-day diet record
1989–91 Diet and Health Knowledge Survey (DHKS)	48 states	Main meal planners/preparers with a completed day-1 intake in CSFII	Dietary knowledge, behavior, and attitudes	Telephone followup to CSFII

Table 1.—Overview of USDA dietary intake surveys, 1965–1996—Continued

Survey	Population	Sample	Type of data collected	Dietary method
1994–96 CSFII	50 states	Oversampling of the low-income population; only selected household members were asked to provide intake information	Individual intake	2 nonconsecutive 24-hr. dietary recalls
1994–96 DHKS	50 states	Adults 20 yr. and over with a completed day-1 intake in CSFII	Dietary knowledge, behavior, and attitudes	Telephone followup to CSFII